Space Weather Forecast

Issued on Wednesday 12 February 2025 at 12:36 Local

This forecast provides a four-day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

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Space Weather Forecast Headline: Chance of isolated Moderate flares. Chance of Minor Geomagnetic storms (G1), most likely late Day 1 into Day 2 (12-13 Feb).

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Low with no significant flares observed. There are six sunspot regions currently on the visible disc, however these are generally small and simple. The larger region in the southeast, is perhaps the most notable, however this appears to be a mature region dominated by its large leader, with only limited complexity or activity. A new region has developed quite rapidly near the centre of the disk, this region will be monitored carefully for signs of magnetic complexity.

No Earth directed Coronal Mass Ejections (CMEs) were observed from available imagery.

Solar Wind / Geomagnetic Activity: The ongoing influence of the fast wind from a coronal hole was observed. Solar wind speeds persisted at elevated, between 500-600km/s. Interplanetary Magnetic Field strength was weak with the north-south component also weak but mainly negative (southwards-directed) with only brief positive intervals. Geomagnetic activity was mostly Unsettled to Active (Kp3-4).

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) was at background throughout with no Solar Radiation Storms occurring.

Four-Day Space Weather Forecast Summary

Solar Activity: Moderate to Low activity expected with a chance of further Moderate class flares.

Solar Wind / Geomagnetic Activity: There are no Earth-directed CMEs. Ongoing fast solar winds are expected to continue through the period. Initially Unsettled to Active geomagnetic activity with a chance of G1 Minor Storms, most likely later Day 1 into day 2 (12-13 Feb).

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) is forecast to remain at background throughout with no Solar Radiation Storms occurring.

Issued by Met Office Space Weather Advisor, Tel: +44 (0) 370 900 0100 Email: enquiries@metoffice.gov.uk

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Geomagnetic Storms

Geomagnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	50	50	30	20
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X-Ray Flares

X-Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 (M Class)	No	40	40	50	50
Very Active	R3-R5 (X Class)	No	1	1	5	5

Solar Radiation Storms (High Energy Protons)

Radiation Storms Probability (Exceedance)	Level ($cm^{-2}sr^{-1}s^{-1}$)	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	5	1	1	1
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and/or 50 MeV ≥ 10pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)

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